

SOME WOOD-BORING AND OTHER INSECTS OF *ACACIA DEALBATA* LINK FROM NORTHERN NEW SOUTH WALES

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Abstract

Nineteen insect taxa were reared from the timber of *Acacia dealbata* collected from Hanging Rock State Forest, near Nundle, New South Wales. Eight species (mostly Cerambycidae) were wood destroying, 8 were either predators or parasites of insects and the remainder were considered incidental inhabitants. A wide range of wood-destroying insects are now known from *A. dealbata*.

Introduction

Acacia dealbata is a common understorey shrub or tree of montane eucalypt forests of eastern Australia (Costermans 1978). Unlike some other species of *Acacia* Willd. in eastern Australia (see Duffey 1963, McKeown 1947, Webb 1987), the phytophagous insects associated with *A. dealbata* are not well known. To date, only species of Cerambycidae and Anthribidae (Coleoptera), and Xyloryctidae and Cossidae (Lepidoptera) have been recorded infesting its timber (Dixon 1908, Elliott and de Little 1984, van den Berg 1982, Webb 1987).

In this study of *A. dealbata* from a *P. radiata* Don. plantation in northern New South Wales, wood-boring and other wood-inhabiting insects are identified. Unpublished records from the collections of the Forestry Commissions of New South Wales, Victoria and Tasmania are also provided.

Study Area and Methods

On 10 September 1984 the stems of two dead standing *A. dealbata* trees (diameter at breast height over bark (DBHOB) = 4 cm, height = ca 3 m) were collected from a 10 yr old *P. radiata* plantation in the Hanging Rock State Forest (31°28'S, 151°13'E) near Nundle, New South Wales. Both stems appeared to have been poisoned with herbicide. The stems and major branches were cut into 50 cm lengths and transported back to Sydney. The timber was maintained in a rearing cage constructed of 1 mm wire mesh within a sheltered, open air enclosure. Emergent insects were recorded during November and December, 1984. The timber was retained until 5 February 1985 but no emergences occurred after 5 December 1984.

Results and Discussion

Wood-borers

Six species of Cerambycidae were reared from the timber (Table 1).

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Two of these, *Rhinophthalmus nasutus* (Shuckard) and *Stenoderus suturalis* (Olivier), do not appear to have been recorded from *A. dealbata* previously. *Phacodes obscurus* (Fabricius) is recorded from *A. dealbata* for the first time (Table 2). Seventeen further species of Cerambycidae have been recorded in the literature or in collections (Table 2). The presence of *Arhopalus syriacus* (Reitter) was surprising as this is an exotic species which almost exclusively attacks *Pinus* spp. (Webb and Kent in prep.). It is possible that the single specimen may have been sheltering beneath the bark.

"*Anthribus*" *bispinus* Erichson (Anthribidae) and *Belus* nr. *brunneus* (Guérin-Méneville) (Belidae) (Table 1) are wood destroying and have not previously been reared from *A. dealbata*. Two species of Bostrychidae, *Xylobosca bispinosa* (Macleay) and *X. canina* (Blackburn), three species of Curculionidae, *Phloeophthorus acaciae* Lea, *Myloccerus* nr. *multimaculatus* Lea and *Orthorhinus cylindrirostris* (Fabricius), and the belid *Belus bidentatus* (Donovan) are also recorded from *A. dealbata* (Table 2).

Only two species, the cerambycid *Probatodes plumula* (Newman) and the scolytid *Phloeophthorus acaciae* Lea, appear to be known only from *A. dealbata* (Tables 1 and 2). However, as these are single records only it is likely that both will infest other host plants.

In this study, the Cerambycidae were the most important group of wood-borers and most of the physical damage to the timber could be attributed to these beetles. Due to the number of species involved and the advanced state of degrade of the timber it was not possible to apportion damage to individual species. The relative abundance of *Ancita crocogaster* (Boisduval) and *Bethelium signiferum* (Newman) suggested that these two species were the main agents of physical degrade.

Predators and Parasites

Two species of Cleridae (*Eleale* nr. *viridis* (Guérin-Méneville) and *Tarsostenodes* nr. *simulator* Blackburn) and one melyrid (*Balanophorus* sp.) were reared from the retained *A. dealbata* stems. No observations were made on the feeding habits of these species but they probably preyed upon wood-boring and other wood-inhabiting insects. Both Cleridae and Melyridae, as adults and larvae, are known to prey on wood-boring insects (Britton 1970, Froggatt 1894, 1916, Moore 1963). Further, other species of Cleridae and particularly other species of *Eleale* Newman have been observed preying on recently emerged insects from timber (Webb pers. obs.).

Three parasitic wasps, one braconid (*Helcon* sp.), one ichneumonid (*Campoplex* sp.) and one aulacid (*Aulacostethus* nr. *variegatus* (Shuckard)) were reared from *A. dealbata* timber during this study.

Table 1. Insects reared from *Acacia dealbata* timber from Hanging Rock State Forest.

W = wood-destroying, Pr = predatory, Pa = parasitic, I = incidental

Species	Status	Number of Specimens	Emergence Dates
Coleoptera			
Cerambycidae			
<i>Ancita crocogaster</i> (Boisduval)	W	7	12, 23, Nov
<i>Arhopalus syriacus</i> (Reitter)	W	1	12 Nov
<i>Bethelium signiferum</i> (Newman)	W	9	9,12,15,23 Nov
<i>Rhinophthalmus nasutus</i> (Shuckard)	W	2	23 Nov, 5 Dec
<i>Stenoderus suturalis</i> (Olivier)	W	1	12 Nov
<i>Syllitus grammicus</i> (Newman)	W	1	29 Nov
Belidae			
<i>Belus</i> nr. <i>brunneus</i> (Guérin-Ménéville)	W	3	9, 12, 16 Nov
Anthribidae			
" <i>Anthribus</i> " <i>bispinus</i> Erichson	W	2	15 Nov
Cleridae			
<i>Eleale</i> nr <i>viridus</i> (Guérin-Ménéville)	Pr	1	9 Nov
<i>Tarsostenodes</i> nr <i>simulator</i> Blackburn	Pr	3	12, 15, 16 Nov
Melyridae			
<i>Balanophorus</i> sp.	Pr	3	12, 15, 16 Nov
Tenebrionidae			
<i>Bassianus colydioides</i> (Erichson)	I	2	12, 23 Nov
Diptera			
Asilidae			
? <i>Brachyrhopala</i> sp.	Pa	1	12 Nov
Tachinidae			
Genus indet.	Pa	1	15 Nov
Hymenoptera			
Braconidae			
<i>Helcon</i> sp.	Pa	1	12 Nov
Ichneumonidae			
<i>Campoplex</i> sp.	Pa	1	15 Nov
Aulacidae			
<i>Aulacostethus</i> nr <i>variegatus</i> (Shuckard)	Pa	4	29 Nov, 5 Dec
Psocoptera			
Sp. 1	I	many	Nov, Dec
Lepidoptera			
Anthelidae			
<i>Nataxa flavescens</i> Walker	I	1	23 Nov

Table 2. Wood-boring insects previously recorded from *Acacia dealbata*.

Species	Reference
Coleoptera	
Cerambycidae	
Cerambycinae	
<i>Bethelium signiferum</i> (Newman)	4, 9
<i>Eburophora octoguttata</i> White	1
<i>Macrones capito</i> Pascoe	1
<i>Notoceresium elongatum</i> McKeown	1
<i>Pachydissus sericus</i> Newman	8
<i>Phacodes obscurus</i> (Fabricius)	7
<i>Phoracantha punctata</i> Donovan	8
<i>Sophron inornatum</i> Newman	9
<i>Syllitus grammicus</i> (Newman)	9
<i>Tessaromma undatum</i> Newman	1, 9
<i>Uracanthus acutus</i> Blackburn	2
<i>Zoedia divisa</i> Pascoe	1
Lamiinae	
<i>Ancita australis</i> (Boisduval)	2
<i>Ancita crocogaster</i> (Boisduval)	2, 6
<i>Ancita marginicollis</i> (Boisduval)	2, 4, 8, 9
<i>Ancita</i> sp. nr <i>antennata</i> (Pascoe)	8
<i>Ancita</i> sp. nr <i>australis</i> (Boisduval)	8
<i>Illaeana exilis</i> Erichson	1
<i>Pentacosmia scoparia</i> Newman	1
<i>Platymopsis lateralis</i> (Pascoe)	9
<i>Probatodes plumula</i> (Newman)	9
Bostrychidae	
<i>Xylobosca bispinosa</i> (Macleay)	4
<i>Xylobosca canina</i> (Blackburn)	6
Buprestidae	
<i>Melobasis</i> sp. nr <i>fulgurans</i> Thomson	1
Curculionidae	
Laemosaccinae	
<i>Saccolaemus</i> sp. indet.	1
Scolytinae	
<i>Phloeophthorus acaciae</i> Lea	6
Otiiorhynchinae	
<i>Myllocerus</i> sp. nr <i>multimaculatus</i> Lea	6
Hylobiinae	
<i>Orthorhinus cylindrirostris</i> (Fabricius)	4
Belidae	
<i>Belus bidentatus</i> (Donovan)	4
Anthribidae	
<i>Doticus palmaris</i> Pascoe	8
Lepidoptera	
Cossidae	
<i>Xyleutes durvillei</i> (Herrich-Schäffer)	3, 7
<i>Xyleutes liturata</i> (Donovan)	5, 8
Xyloryctidae	
<i>Cryptophasa melanostigma</i> (Wallengren)	8
<i>Cryptophasa unipunctata</i> Donovan	7

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The subfamily Helconinae (Braconidae) and the Aulacidae are obligate coleopteran parasites (Froggatt 1916, Moore 1963, Riek 1970) the latter in particular, have been reared from cerambycid hosts (Riek 1970). However, Gauld (1984) suggests that the ichneumonid genus *Campoplex* Gravenhorst may be primarily, if not obligate parasites of Lepidoptera. Only one lepidopteran, *Nataxa flavescens* Walker, was reared from the timber.

Flies of the families Tachinidae and Asilidae were reared from the *A. dealbata* timber but their hosts could not be determined. Tachinid larvae are obligate endoparasites of other arthropods while asilid larvae may be predacious on other insects (Colless and McAlpine 1970).

Incidental Inhabitants

The remaining taxa: species of Tenebrionidae (Coleoptera), Psocoptera and Anthelidae (Lepidoptera) are considered to be incidental inhabitants of the bark or damaged timber. Species of Tenebrionidae are often found beneath bark and in decayed timber (Britton 1970), Psocoptera are common residents of loose or flaking bark (Smithers 1970) and the anthelid *Nataxa flavescens*, is known to pupate beneath loose bark or within disused borer holes (K.D. Fairey, pers. comm.).

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